17. Barbus, sp.

A very young specimen, 5 cm. long, from Lake Rudolf, cannot be specifically determined.

18. Mormyrus zambanenje, Ptrs.

In a specimen from Geledi on the Webi Shebeli (19.1.95) the dorsal fin is a little more than half as long as the anal. D. 21. A. 41.

3. Remarks on the System of Coloration and Punctuation in the Beetles of the Genus *Calligrapha*. By Martin Jacoby, F.E.S.

[Received January 2, 1896.]

The paper which I have the honour to lay before the Society gives a short account of a somewhat exceptional feature in the Coleoptera, which occurs amongst the Chrysomelidæ in the genus *Calligrapha*, but in no other families of Coleoptera to my knowledge. This genus has its metropolis in Central America, and is represented by numerous prettily marked species, all more or less closely allied. In these insects, the ground-colour of the elytra is always pale yellow, but often assumes a golden hue when the insect is alive: this yellow ground-colour is marked with metallic brown or blue, sometimes violet spots, and stripes, but in many species this colour (if it can be so called) is replaced by reddish-fulvous or brown, not of a metallic hue. The elytra of most Coleoptera are impressed with more or less deep punctures, either arranged in longitudinal rows or irregularly distributed, and even when the elytra are pubescent the punctures will be seen when the hairs are removed. In no other insects of this order do the punctures seem to be dependent on the coloration or pattern of the elytra, or *vice versa*, but both go their own way; but in the case of the genus *Calligrapha* the interesting observation may be made that nearly all stripes or spots, no matter how few or many or what may be their shape, are bounded or surrounded at their margins by a row of deep punctures, deeper than those of the ground-colour, beyond which the colour does not extend. This is very remarkable, since I know of no instance in which punctures assume a circle in other species, much less that circular and longitudinal rows of punctures are found in the same individual according to the design as is the case in *Calligrapha*. The question which strikes one now is, how could this coloration influence a deep punctuation or the latter the colouring of the insect: a few instances are found in which some of the spots or bands are free from punctures at their lower portion, but their outlines are just as well defined as those which have the punctures complete. According to Burmeister, the punctures of the elytra are formed by the interruption of the chitinous matter, causing small pits or punctures to be formed, but the regularity

with which this takes place seems wonderful and to me somewhat analogous to crystallization in inorganic matter. If the elytra are examined from their upper surface, the difference between the larger punctures surrounding the spots and those of the ground-colour is very marked, the latter being irregularly and the others regularly placed; but if the elytra are removed and examined from the inner side, a thin layer of skin covers the entire surface, but the punctures shine through it and seem of nearly equal size and much more numerous. I may further mention, that all the spots or bands on the upper surface seem slightly convex and show rarely any punctures except round their margins. These are all the observations I am able to record; and I must leave to anatomists to form any conclusions, if such are possible, as to the way in which nature has worked here, and whether we could obtain any clue by examining the insect in its native place, when immature and in process of formation, so as to get some idea how colour, so distinct from punctuation, can influence the latter or the reverse, when this is apparently the case in so exceptional an instance as the present. The subject itself is not new, having been noticed by Chapuis and myself some years ago, but I think it well to draw attention to it again, so that more observations may be made, if possible.

4. On the Oblique Septa ("Diaphragm" of Owen) in the Passerines and in some other Birds. By Frank E. Beddard, M.A., F.R.S., Prosector to the Society, Examiner in Zoology and Comparative Anatomy to the University of London.

[Received December 16, 1895.]

The facts which I bring before the Society have been accumulating in my notebook for the last few years, and even now there are numbers of types of Passerine birds which I have not had, and may never have, the opportunity of examining. Less emphasis, therefore, must be laid upon such classificatory conclusions as I venture to bring forward, than upon the actual facts which I record. There are a certain number of desirable Passerine genera represented in the rich spirit stores of the Prosector's department, but not referred to in the present paper; I have thought it unwise to make any use of them, since fresh material is so essential for the proper study of delicate and transparent membranes.

The greater part of the present communication deals with the divergent structure of what Prof. Huxley[1] has termed the "*oblique septum*" in Passerine birds. I may therefore conveniently commence with a description of the normal arrangement of this structure, as it is seen for example in the Duck. And I avail myself of Prof. Huxley's own words[2]:—"The second so-

[1] "On the Respiratory Organs of *Apteryx*," P. Z. S. 1882.
[2] *Loc. cit.* p. 561.